

What is claimed is:

1. A stage lighting system, comprising:
a source of light producing a light beam;
an electronic device in a path of the source of light,
and which receives an electronic file representing an image to
be used to shape the light beam, wherein said electronic file
comprises a plurality of polygons which are defined as
vectors.

2. A system as in claim 1, further comprising a digital
signal processor, which carries out arithmetic operations on
said vectors.

3. A device as in claim 2, wherein one of said
arithmetic operations comprises rotating the image and thereby
rotating a shaped beam of light which has been shaped by the
image.

4. A device as in claim 2, wherein one of said
arithmetic operations comprises matrix arithmetic carried out
on the polygons.

5. A method of shaping a beam of light, comprising:

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providing a device which shapes a stage lighting beam based on a digital signal that is applied thereto;

a plurality of gobo layers, at least a first of said layers being a gobo image to shape the beam and a second layer forming a filter for the gobo image produced by said first layer, said second layer operating to change the image of the first layer.

6. A method as in claim 5, wherein said filter causes scaling of the gobo image.

7. A method as in claim 5, wherein said filter is a decay of the gobo image.

8. A method as in claim 5, wherein said filter is a blur of the gobo image which causes the image to be out of focus in some locations.

9. A method as in claim 5, wherein said filter is a simulation of the effect of the optical glass in an analog gobo.

10. A method as in claim 5, wherein said filter includes information which is arithmetically combined with the first image.

11. A method as in claim 10, wherein said arithmetic combination is via one of an "and", "or", or an "exclusive or".

12. A method of representing a plurality of different gobos, comprising:

forming a manual, having different parts which represent said different gobos;

adding filters for said gobos to said manual, said filters representing effects which can be carried out on other ones of said gobos; and

allowing selection of any of said gobos and/or any of said filters over a common user interface.

13. A method as in claim 12, wherein said filter is a filter that one of scales the image, decays the image, or blurs the image.

14. A method of displaying light from a stage light, comprising:

projecting said light through a digital device which is digitally controllable to determine a shape of projected light based on a digital control signal; and

driving said digital device with a file that executes code to form said digital control signal, which changes at different times.

15. A method as in claim 14, wherein said code comprises an associated area to hold static values and variable portions, and further comprising modifying said variable portions.

16. A method comprising:

defining an image as specified numbers of bits of primary colors;

translating the image from a bit-based form which defines in terms of its primary colors, into chrominance and its luminance values indicative thereof;

dimming the image by reducing the luminance value while maintaining constant chrominance; and

reconverting the chrominance and luminance back into said bit based form.

17. A method as in claim 16, further comprising using a digitally controllable pixel level device in the path of a light beam, and controlling said digitally controllable pixel level device using said bit-based form.

18. A method as in claim 17, wherein said digitally controllable device is a digital mirror device.

19. A method as in claim 16, further comprising apportioning said chrominance as bits between a total allotted number of bits.

20. A method as in claim 19, wherein there are a total allotted number of 8 bits, and wherein two of the primary colors get three bits and the other of the primary color gets two bits for its chrominance.

21. A method as in claim 19, further comprising assigning adjacent lines the same color values, and providing additional resolution of said color values by combining said color values.

22. A method as in claim 21, further comprising modifying said image to maintain byte boundaries.

23. A method as in claim 16, further comprising combining multiple images together to provide twice as many available bits for the combined lines.

24. A method as in claim 16, further comprising dimming the image by multiplying each of the luminances associated with each of the chrominances by a specified value.

25. A method of forming a digital framing shutter, comprising:

defining aspects of a framing shutter, including four shutters, each of which have a straight line portion for framing the shutter, said straight portion being definable by its position in a light beam and its angle; and

defining a record for a gobo which simulates said framing shutters.

26. A method as in claim 25, wherein said framing shutter record includes multiple values for positions of each of four framing shutters including a value D representing a distance between a portion of the framing shutter and an edge of an original spot of a light beam, and a value theta

defining an angle between the blade between the framing shutter and the specified angle.

27. A method as in claim 26, further comprising defining an offset representing a distance between an edge and an ideal edge.

28. A method as in claim 27, wherein said value D comprises a distance between an edge of the framing shutter and an edge of the original spot.

29. A method of defining an image to be projected by a light beam projector, comprising:

defining a desired gobo to be displayed as a multilayered image, where at least one of a plurality of layers includes information representing at least one gobo, and at least one other layer has the capability of including at least one effect for the at least one gobo.

30. A method as in claim 29, wherein the at least one layer includes a gobo defined by an image file, and all other layers operate on the first layer by modifying said image file.

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31. A method as in claim 30, wherein a second layer includes a filter that operates on a gobo in a first layer.

32. A method as in claim 30, wherein an operation of a second layer is applied to an entire image, formed of all the layers.

33. A method as in claim 30, wherein an operation of a second layer is applied to only specified layers.

34. A method as in claim 33, wherein said operation is applied incrementally to the entire image.

35. A method as in claim 30, further comprising
forming a manual, having different parts which represent
a plurality of said gobos;
adding filters for said gobos to said manual, said
filters representing effects which can be carried out on other
ones of said gobos; and
allowing selection of one of said gobos and/or filters
over a common user interface.

36. A method as in claim 35, wherein said catalog is defined as trees with branches.

37. A method as in claim 36, wherein said branches are defined according to both commonality of use and by categories.

38. A method of arranging gobos in a catalog, comprising:

organizing the gobos both in terms of both commonality of use, and category of their actual formation in a tree structure, which has branches at different locations; and

keeping more common gobos closer to a bottom portion of the tree.

39. A method as in claim 38, wherein said organizing comprises organizing into a manual, having different parts which represent said gobos;

adding filters for said gobos to said manual, said filters representing effects which can be carried out on other ones of said gobos; and

allowing selection of one of said gobos and/or filters over a common user interface.

40. A method as in claim 38, wherein at least one of the gobos is listed multiple times in the catalog.

41. A method as in claim 40, further comprising using items from the catalog to form a plurality of layers, and combining said layers to form a composite image.

42. A method as in claim 41, wherein said composite image is formed by a mathematical combination of bits in the catalog.

43. A method as in claim 42, wherein said combination is a logical AND, a logical OR, a mathematical addition or multiplication, or a highest text precedent combination where brightest parts of the image are taken, or an exclusive OR.

44. A method as in claim 38, wherein said gobo is a variable animation gobo.

45. A method as in claim 44, wherein said variable animation gobo includes a menu mode.